

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	652	544/236.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2007/06/15 18:08

Cecilia Jaisle

10522798

INVENTOR SEARCH

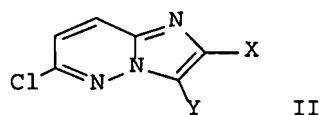
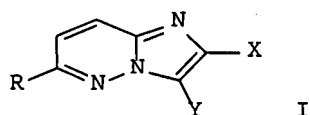
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L6 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2004:101165 HCAPLUS Full-text
 DOCUMENT NUMBER: 140:128426
 TITLE: Preparation of imidazo[1,2-b]pyridazine derivatives
 INVENTOR(S): Tabuchi, Takanori; Yamamoto, Tetsuhiro; Kajiwara, Takeshi
 PATENT ASSIGNEE(S): Sumitomo Chemical Takeda Agro Company, Limited, Japan
 SOURCE: PCT Int. Appl., 43 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004011466	A1	20040205	WO 2003-JP9003	20030716
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
WO 2003061388	A1	20030731	WO 2003-JP244	20030115
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AU 2003252509	A1	20040216	AU 2003-252509	20030716
EP 1541575	A1	20050615	EP 2003-771268	20030716
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US 2005171108	A1	20050804	US 2003-522798	20030716
IN 2005CN00086	A	20070330	IN 2005-CN86	20050127
JP 2005239735	A	20050908	JP 2005-94153	20050329
JP 2005325127	A	20051124	JP 2005-173888	20050614
PRIORITY APPLN. INFO.:			JP 2002-219786	A 20020729
			WO 2003-JP244	A 20030115
			JP 2003-85617	A 20030326
			JP 2002-10246	A 20020118
			JP 2003-6756	A3 20030115
			WO 2003-JP9003	W 20030716
			JP 2005-94153	A3 20050329

OTHER SOURCE(S):
GI

CASREACT 140:128426; MARPAT 140:128426



AB A process for easily and inexpensively producing an imidazo[1,2-b]pyridazin-3-ylsulfonamide derivative which has a substituent bonded to the 6-position carbon atom and is represented by the formula I (wherein R represents lower alkyl, lower cycloalkyl optionally substituted by lower alkyl, lower alkenyl, or lower alkynyl), the process comprising reacting an imidazo[1,2-b]pyridazine compound represented by the formula II (wherein X represents halogeno or lower alkyl optionally substituted by halogeno; Y represents hydrogen or SO₂N = CH-NR₁R₂; and Z represents halogeno or OSO₂R₃) with an organometallic compound in the presence of a transition metal catalyst. The derivative is useful as an intermediate for herbicides. Thus, reaction of 6-chloro-2-methylimidazo[1,2-b]pyridazine with EtMgBr in Et₂O and THF in the presence of NiCl₂(dppp) gave 27.4% 6-ethyl-2-methylimidazo[1,2-b]pyridazine.

IC ICM C07D487-04

CC 28-15 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 5

ST imidazopyridazine prepn intermediate herbicide

IT Herbicides

(intermediates; preparation of imidazopyridazines as intermediates for herbicides)

IT 15629-92-2

RL: CAT (Catalyst use); USES (Uses)

(preparation of imidazopyridazines as intermediates for herbicides)

IT 570416-17-0P 570416-18-1P 570416-19-2P

570416-23-8P 570416-24-9P 570416-44-3P

570416-45-4P 570416-46-5P 570416-47-6P

649736-88-9P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(preparation of imidazopyridazines as intermediates for herbicides)

IT 109-72-8, Butyllithium, reactions 925-90-6,

Ethylmagnesium bromide 926-62-5, Isobutylmagnesium bromide

927-77-5, n-Propylmagnesium bromide 1730-25-2,

Allylmagnesium bromide 2234-82-4, n-Propylmagnesium chloride

2386-64-3, Ethylmagnesium chloride 2591-76-6

4637-24-5, DMF dimethyl acetal 7790-94-5, Chlorosulfonic

acid 14092-04-7, 1-Propenylmagnesium bromide 14793-00-1

23719-80-4, Cyclopropylmagnesium bromide 112581-77-8

112582-77-1 156567-57-6, n-Propylzinc bromide

570416-53-4 649736-83-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of imidazopyridazines as intermediates for herbicides)

IT 570416-03-4P 570416-04-5P 570416-05-6P

570416-06-7P 570416-07-8P 570416-08-9P

570416-12-5P 649736-84-5P 649736-85-6P

649736-86-7P 649736-87-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(preparation of imidazopyridazines as intermediates for herbicides)

IT 649736-89-0P

RL: SPN (Synthetic preparation); PREP (Preparation)

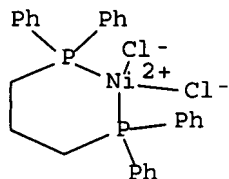
(preparation of imidazopyridazines as intermediates for herbicides)

IT 15629-92-2

RL: CAT (Catalyst use); USES (Uses)

(preparation of imidazopyridazines as intermediates for herbicides)

RN 15629-92-2 HCAPLUS

CN Nickel, dichloro[1,3-propanediylbis[diphenylphosphine-κP]]- (9CI)
(CA INDEX NAME)

IT 570416-17-0P 570416-18-1P 570416-19-2P

570416-23-8P 570416-24-9P 570416-44-3P

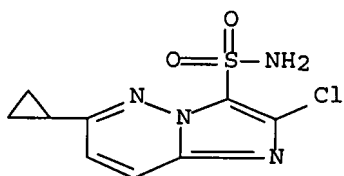
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649736-88-9P

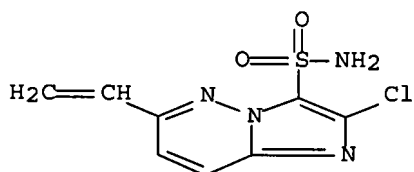
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
(Preparation)

(preparation of imidazopyridazines as intermediates for herbicides)

RN 570416-17-0 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 2-chloro-6-cyclopropyl- (9CI) (CA
INDEX NAME)

RN 570416-18-1 HCAPLUS

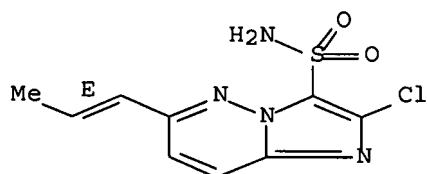
CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 2-chloro-6-ethenyl- (9CI) (CA
INDEX NAME)

RN 570416-19-2 HCAPLUS

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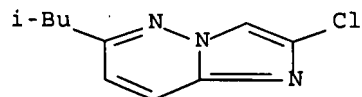
CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 2-chloro-6-(1E)-1-propenyl- (9CI)
(CA INDEX NAME)

Double bond geometry as shown.



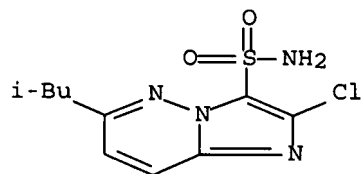
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CN Imidazo[1,2-b]pyridazine, 2-chloro-6-(2-methylpropyl)- (9CI) (CA INDEX NAME)



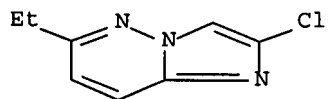
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CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 2-chloro-6-(2-methylpropyl)- (9CI)
(CA INDEX NAME)



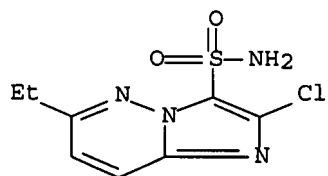
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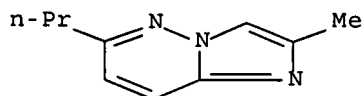
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CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 2-chloro-6-ethyl- (9CI) (CA INDEX NAME)



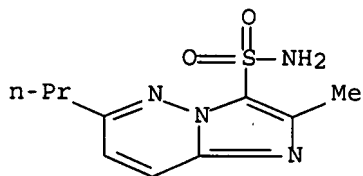
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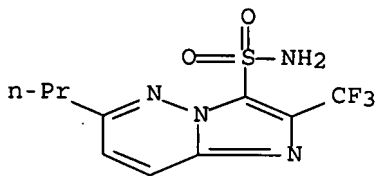
RN 570416-47-6 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 2-methyl-6-propyl- (9CI) (CA INDEX NAME)



RN 649736-88-9 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 6-propyl-2-(trifluoromethyl)- (9CI) (CA INDEX NAME)



IT 109-72-8, Butyllithium, reactions 925-90-6,
Ethylmagnesium bromide 926-62-5, Isobutylmagnesium bromide
927-77-5, n-Propylmagnesium bromide 1730-25-2,
Allylmagnesium bromide 2234-82-4, n-Propylmagnesium chloride
2386-64-3, Ethylmagnesium chloride 2591-76-6
4637-24-5, DMF dimethyl acetal 7790-94-5, Chlorosulfonic
acid 14092-04-7, 1-Propenylmagnesium bromide 14793-00-1
23719-80-4, Cyclopropylmagnesium bromide 112581-77-8
112582-77-1 156567-57-6, n-Propylzinc bromide
570416-53-4 649736-83-4

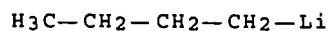
RL: RCT (Reactant); RACT (Reactant or reagent)

10/522,798

(preparation of imidazopyridazines as intermediates for herbicides)

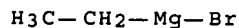
RN 109-72-8 HCAPLUS

CN Lithium, butyl- (CA INDEX NAME)



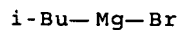
RN 925-90-6 HCAPLUS

CN Magnesium, bromoethyl- (CA INDEX NAME)



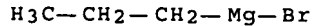
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CN Magnesium, bromo(2-methylpropyl)- (9CI) (CA INDEX NAME)



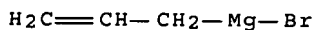
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CN Magnesium, bromopropyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



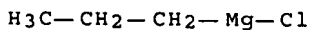
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CN Magnesium, bromo-2-propenyl- (9CI) (CA INDEX NAME)



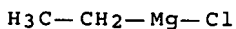
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CN Magnesium, chloropropyl- (CA INDEX NAME)



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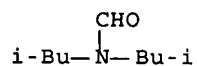
CN Magnesium, chloroethyl- (CA INDEX NAME)



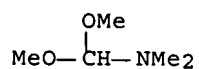
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CN Formamide, N,N-bis(2-methylpropyl)- (9CI) (CA INDEX NAME)

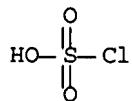
10/522,798



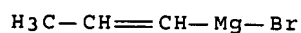
RN 4637-24-5 HCAPLUS
CN Methanamine, 1,1-dimethoxy-N,N-dimethyl- (CA INDEX NAME)



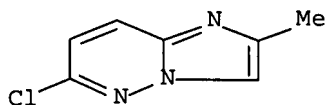
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CN Chlorosulfuric acid (8CI, 9CI) (CA INDEX NAME)



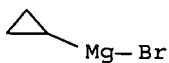
RN 14092-04-7 HCAPLUS
CN Magnesium, bromo-1-propenyl- (9CI) (CA INDEX NAME)



RN 14793-00-1 HCAPLUS
CN Imidazo[1,2-b]pyridazine, 6-chloro-2-methyl- (8CI, 9CI) (CA INDEX NAME)

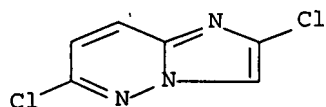


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CN Magnesium, bromocyclopropyl- (CA INDEX NAME)



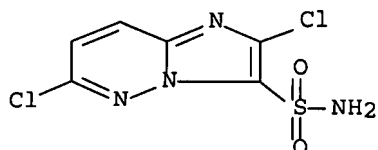
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CN Imidazo[1,2-b]pyridazine, 2,6-dichloro- (CA INDEX NAME)

10/522,798



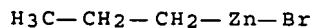
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CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 2,6-dichloro- (9CI) (CA INDEX NAME)



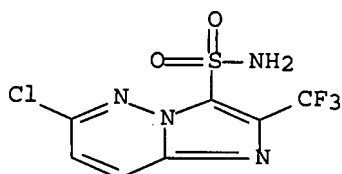
RN 156567-57-6 HCAPLUS

CN Zinc, bromopropyl- (9CI) (CA INDEX NAME)



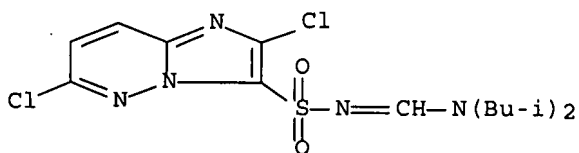
RN 570416-53-4 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 6-chloro-2-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 649736-83-4 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, N-[[bis(2-methylpropyl)amino]methylene]-2,6-dichloro- (9CI) (CA INDEX NAME)



IT 570416-03-4P 570416-04-5P 570416-05-6P
570416-06-7P 570416-07-8P 570416-08-9P
570416-12-5P 649736-84-5P 649736-85-6P

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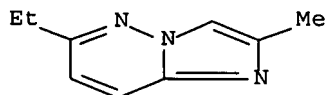
649736-86-7P 649736-87-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of imidazopyridazines as intermediates for herbicides)

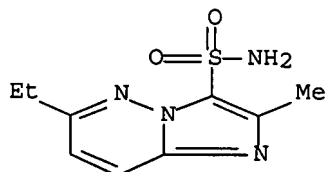
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CN Imidazo[1,2-b]pyridazine, 6-ethyl-2-methyl- (9CI) (CA INDEX NAME)



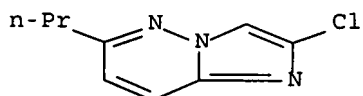
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CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 6-ethyl-2-methyl- (9CI) (CA INDEX NAME)



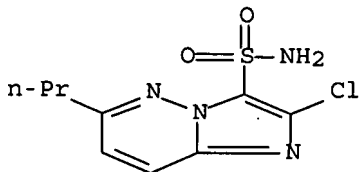
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CN Imidazo[1,2-b]pyridazine, 2-chloro-6-propyl- (CA INDEX NAME)



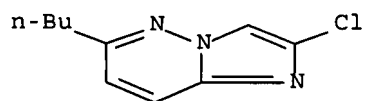
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CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 2-chloro-6-propyl- (CA INDEX NAME)



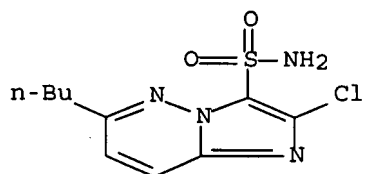
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CN Imidazo[1,2-b]pyridazine, 6-butyl-2-chloro- (9CI) (CA INDEX NAME)



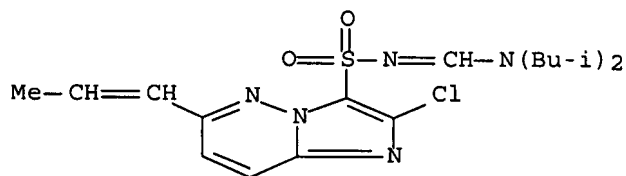
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CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 6-butyl-2-chloro- (9CI) (CA INDEX NAME)



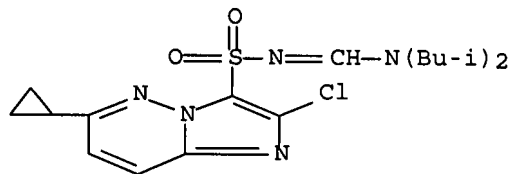
RN 570416-12-5 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, N-[[bis(2-methylpropyl)amino]methylene]-2-chloro-6-(1-propenyl)- (9CI) (CA INDEX NAME)



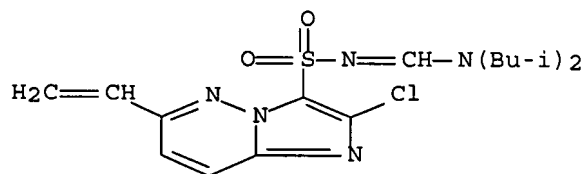
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CN Imidazo[1,2-b]pyridazine-3-sulfonamide, N-[[bis(2-methylpropyl)amino]methylene]-2-chloro-6-cyclopropyl- (9CI) (CA INDEX NAME)



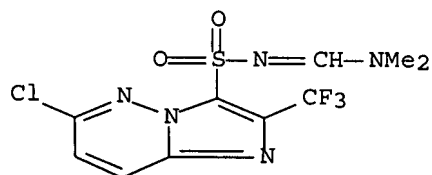
RN 649736-85-6 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, N-[[bis(2-methylpropyl)amino]methylene]-2-chloro-6-ethenyl- (9CI) (CA INDEX NAME)



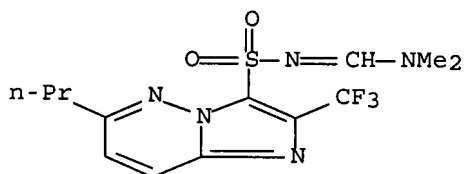
RN 649736-86-7 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 6-chloro-N-[(dimethylamino)methylene]-2-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 649736-87-8 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, N-[(dimethylamino)methylene]-6-propyl-2-(trifluoromethyl)- (9CI) (CA INDEX NAME)

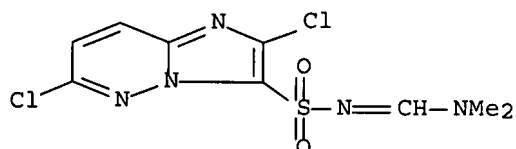


IT 649736-89-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of imidazopyridazines as intermediates for herbicides)

RN 649736-89-0 HCAPLUS

CN Imidazo[1,2-b]pyridazine-3-sulfonamide, 2,6-dichloro-N-[(dimethylamino)methylene]- (9CI) (CA INDEX NAME)



REFERENCE COUNT:

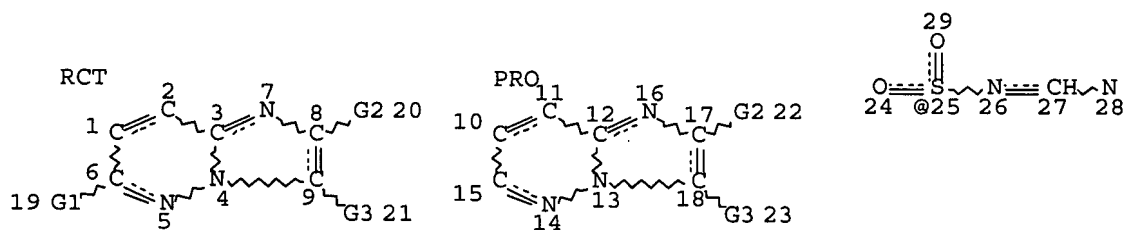
11

THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SEARCH IN CASREACT

=> d que stat l9

L7 STR



VAR G1=X/OS

VAR G2=X/C

VAR G3=X/25

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 29

STEREO ATTRIBUTES: NONE

L9 2 SEA FILE=CASREACT SSS FUL L7 (10 REACTIONS)

100.0% DONE 197 VERIFIED 10 HIT RXNS

2 DOCS

SEARCH TIME: 00.00.01

ENTER DISPLAY FORMAT (FCRDREF):all

L9 ANSWER 1 OF 2 CASREACT COPYRIGHT 2007 ACS on STN

AN 140:128426 CASREACT Full-text

TI Preparation of imidazo[1,2-b]pyridazine derivatives

IN Tabuchi, Takanori; Yamamoto, Tetsuhiro; Kajiwara, Takeshi

PA Sumitomo Chemical Takeda Agro Company, Limited, Japan

SO PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

IC ICM C07D487-04

CC 28-15 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 5

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004011466	A1	20040205	WO 2003-JP9003	20030716
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
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FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
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WO 2003061388 A1 20030731 WO 2003-JP244 20030115

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS,
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 PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,
 UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003252509 A1 20040216 AU 2003-252509 20030716

EP 1541575 A1 20050615 EP 2003-771268 20030716

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

US 2005171108 A1 20050804 US 2003-522798 20030716

IN 2005CN00086 A 20070330 IN 2005-CN86 20050127

JP 2005239735 A 20050908 JP 2005-94153 20050329

JP 2005325127 A 20051124 JP 2005-173888 20050614

PRAI JP 2002-219786 20020729

WO 2003-JP244 20030115

JP 2003-85617 20030326

JP 2002-10246 20020118

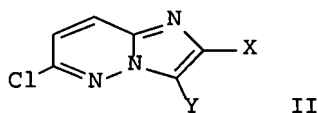
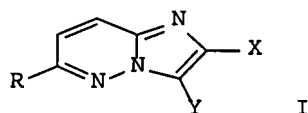
JP 2003-6756 20030115

WO 2003-JP9003 20030716

JP 2005-94153 20050329

OS MARPAT 140:128426

GI



AB A process for easily and inexpensively producing an imidazo[1,2- b]pyridazin-3-ylsulfonamide derivative which has a substituent bonded to the 6-position carbon atom and is represented by the formula I (wherein R represents lower alkyl, lower cycloalkyl optionally substituted by lower alkyl, lower alkenyl, or lower alkynyl), the process comprising reacting an imidazo[1,2-b]pyridazine compound represented by the formula II (wherein X represents halogeno or lower alkyl optionally substituted by halogeno; Y represents hydrogen or SO₂N = CH-NR₁R₂; and Z represents halogeno or OSO₂R₃) with an organometallic compound in the presence of a transition metal catalyst. The derivative is useful as an intermediate for herbicides. Thus, reaction of 6-chloro-2-methylimidazo[1,2-b]pyridazine with EtMgBr in Et₂O and THF in the presence of NiCl₂(dppp) gave 27.4% 6-ethyl-2-methylimidazo[1,2-b]pyridazine.

ST imidazopyridazine prepn intermediate herbicide

IT Herbicides
 (intermediates; preparation of imidazopyridazines as intermediates for herbicides)

IT 15629-92-2
 RL: CAT (Catalyst use); USES (Uses)
 (preparation of imidazopyridazines as intermediates for herbicides)

IT 570416-17-0P 570416-18-1P 570416-19-2P 570416-23-8P 570416-24-9P

10/522,798

570416-44-3P 570416-45-4P 570416-46-5P 570416-47-6P 649736-88-9P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(preparation of imidazopyridazines as intermediates for herbicides)

IT 109-72-8, Butyllithium, reactions 925-90-6, Ethylmagnesium bromide
926-62-5, Isobutylmagnesium bromide 927-77-5, n-Propylmagnesium bromide
1730-25-2, Allylmagnesium bromide 2234-82-4, n-Propylmagnesium chloride
2386-64-3, Ethylmagnesium chloride 2591-76-6 4637-24-5, DMF dimethyl
acetal 7790-94-5, Chlorosulfonic acid 14092-04-7, 1-Propenylmagnesium
bromide 14793-00-1 23719-80-4, Cyclopropylmagnesium bromide
112581-77-8 112582-77-1 156567-57-6, n-Propylzinc bromide
570416-53-4 649736-83-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of imidazopyridazines as intermediates for herbicides)

IT 570416-03-4P 570416-04-5P 570416-05-6P 570416-06-7P 570416-07-8P
570416-08-9P 570416-12-5P 649736-84-5P 649736-85-6P 649736-86-7P
649736-87-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of imidazopyridazines as intermediates for herbicides)

IT 649736-89-0P

RL: SPN (Synthetic preparation); PREP (Preparation)

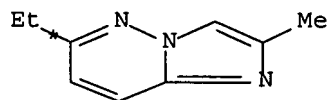
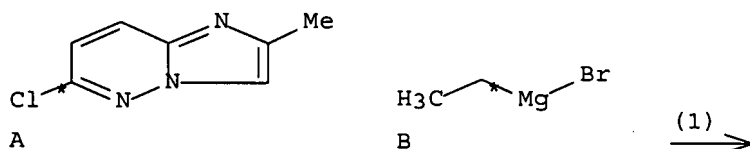
(preparation of imidazopyridazines as intermediates for herbicides)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Ishikawa, T; THE JOURNAL OF ANTIBIOTICS 2001, V54(3), P257 CAPLUS
- (2) Mourad, A; J Heterocyclic Chem 1992, V29, P1583 CAPLUS
- (3) Pollak, A; Tetrahedron 1968, V24(6), P2623 CAPLUS
- (4) Satoh, K; HETEROCYCLES 1978, V10, P269 CAPLUS
- (5) Sumika Takeda Noyaku Kabushiki Kaisha; WO 03061388 A1 2003 CAPLUS
- (6) Takeda Chemical Industries Ltd; JP 01-316379 A 1989 CAPLUS
- (7) Takeda Chemical Industries Ltd; WO 0023450 A1 2000 CAPLUS
- (8) Takeda Chemical Industries Ltd; EP 1123936 A1 2000 CAPLUS
- (9) Takeda Chemical Industries Ltd; JP 12-191663 A 2000
- (10) Takeda Chemical Industries Ltd; JP 12-191664 A 2000
- (11) Takeda Chemical Industries Ltd; AU 6227399 A 2000

RX(1) OF 45 A + B ==> C...

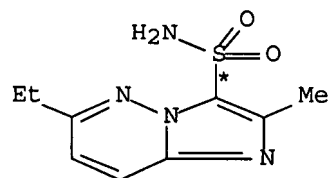
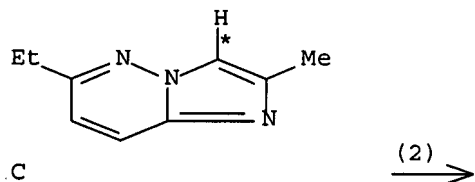


C
YIELD 27%

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RX(1) RCT A 14793-00-1, B 925-90-6
 PRO C 570416-03-4
 CAT 15629-92-2 Ni complex
 SOL 60-29-7 Et₂O, 109-99-9 THF
 CON SUBSTAGE(1) 2 hours, room temperature
 SUBSTAGE(2) 3 hours, reflux

RX(2) OF 45 ...C ==> G



YIELD 44%

RX(2) RCT C 570416-03-4

STAGE(1)

RGT H 7790-94-5 ClSO₃H
 SOL 107-06-2 ClCH₂CH₂Cl
 CON 5 hours, reflux

STAGE(2)

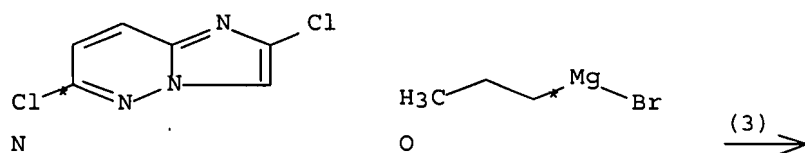
RGT I 10025-87-3 POCl₃, J 121-44-8 Et₃N
 CON 2 hours, reflux

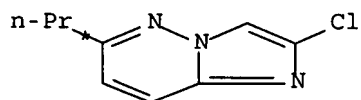
STAGE(3)

RGT K 1336-21-6 NH₄OH
 SOL 7732-18-5 Water
 CON 2 hours, room temperature

PRO G 570416-04-5

RX(3) OF 45 N + O ==> P...

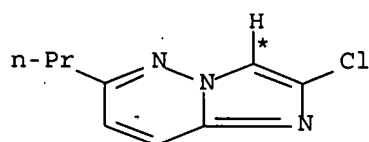




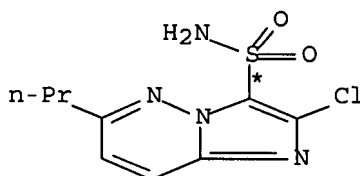
P
YIELD 88%

RX(3) RCT N 112581-77-8, O 927-77-5
 PRO P 570416-05-6
 CAT 15629-92-2 Ni complex
 SOL 109-99-9 THF
 CON SUBSTAGE(1) 10 minutes, 0 deg C
 SUBSTAGE(2) 2 hours, room temperature

RX(4) OF 45 ...P ==> Q



P



Q
YIELD 43%

RX(4) RCT P 570416-05-6

STAGE(1)

RGT H 7790-94-5 ClSO3H
 SOL 107-06-2 ClCH2CH2Cl
 CON 5 hours, reflux

STAGE(2)

RGT I 10025-87-3 POCl3, J 121-44-8 Et3N
 CON 2 hours, reflux

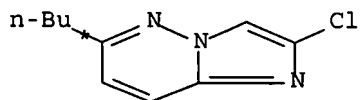
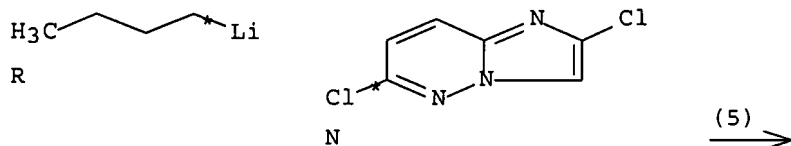
STAGE(3)

RGT K 1336-21-6 NH4OH
 SOL 7732-18-5 Water
 CON 2 hours, room temperature

PRO Q 570416-06-7

RX(5) OF 45 R + N ==> S...

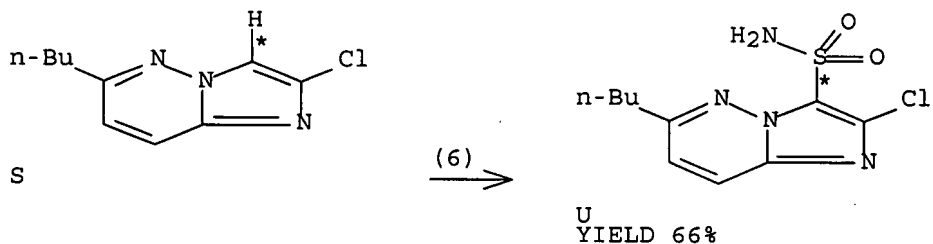
10/522,798



S
YIELD 96%

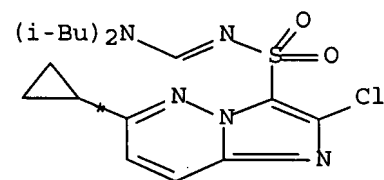
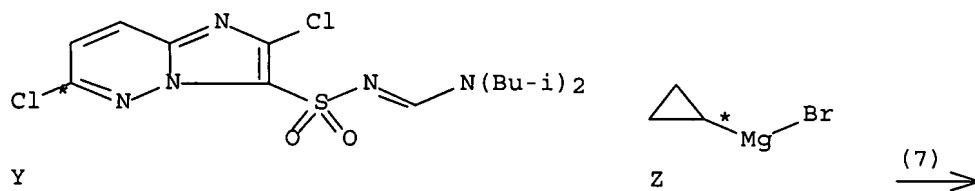
RX(5) RCT R 109-72-8, N 112581-77-8
 RGT T 7646-85-7 ZnCl₂
 PRO S 570416-07-8
 CAT 15629-92-2 Ni complex
 SOL 109-99-9 THF
 CON SUBSTAGE(1) 15 minutes, 0 deg C
 SUBSTAGE(2) 3 hours, room temperature

RX(6) OF 45 ...S ==> U



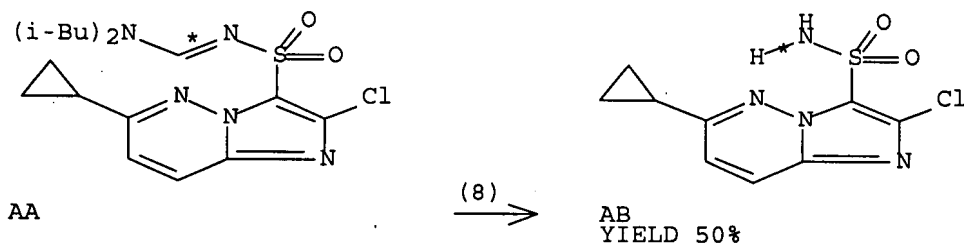
RX(6) RCT S 570416-07-8
 STAGE(1)
 RGT H 7790-94-5 ClSO₃H
 SOL 67-66-3 CHCl₃
 CON 9 hours, reflux
 STAGE(2)
 RGT I 10025-87-3 POCl₃, J 121-44-8 Et₃N
 CON 4 hours, reflux
 STAGE(3)
 RGT V 7664-41-7 NH₃
 SOL 75-05-8 MeCN
 CON SUBSTAGE(1) 30 minutes, 0 deg C
 SUBSTAGE(2) 1 hour, room temperature
 PRO U 570416-08-9

RX(7) OF 45 ...Y + Z ==> AA...

AA
YIELD 45%

RX(7) RCT Y 649736-83-4, Z 23719-80-4
 RGT T 7646-85-7 ZnCl₂
 PRO AA 649736-84-5
 CAT 15629-92-2 Ni complex
 SOL 109-99-9 THF
 CON SUBSTAGE(1) 2 hours, -10 deg C
 SUBSTAGE(2) 10 hours, room temperature

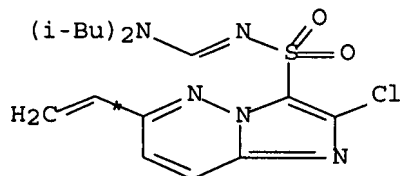
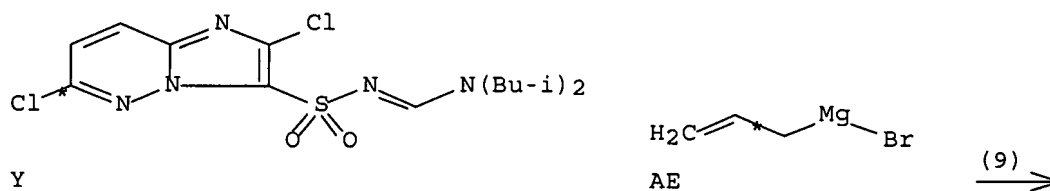
RX(8) OF 45 ...AA ==> AB

AA
AB
YIELD 50%

RX(8) RCT AA 649736-84-5
 RGT AC 7647-01-0 HCl
 PRO AB 570416-17-0
 SOL 7732-18-5 Water, 123-91-1 Dioxane
 CON 15 hours, 100 - 105 deg C

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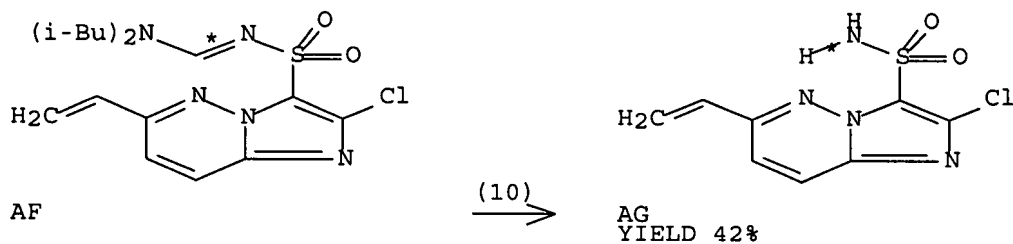
RX(9) OF 45 ...Y + AE ==> AF...



AF
YIELD 80%

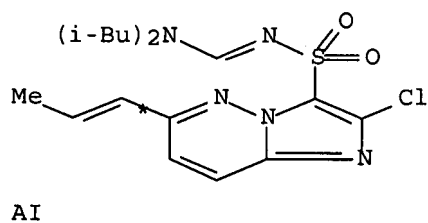
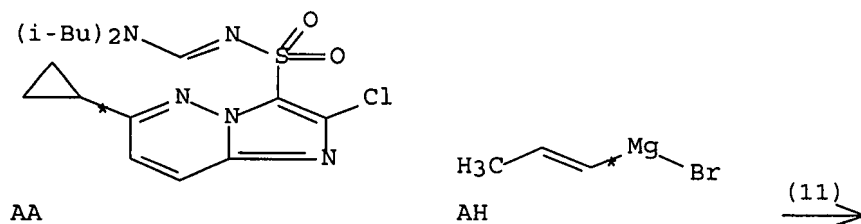
RX(9) RCT Y 649736-83-4, AE 1730-25-2
 RGT T 7646-85-7 ZnCl₂
 PRO AF 649736-85-6
 CAT 15629-92-2 Ni complex
 SOL 109-99-9 THF
 CON SUBSTAGE(1) 2 hours, -10 deg C
 SUBSTAGE(2) 10 hours, room temperature

RX(10) OF 45 ...AF ==> AG



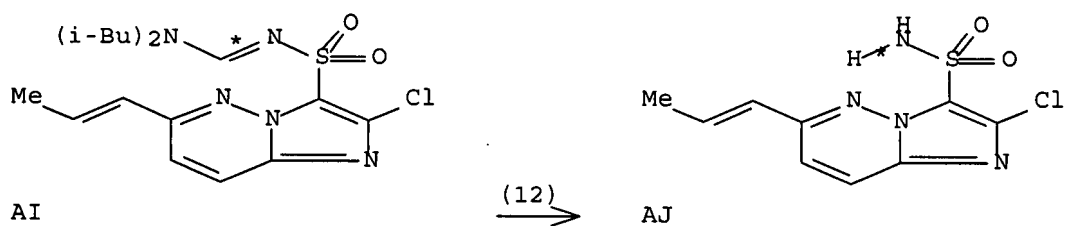
RX(10) RCT AF 649736-85-6
 RGT AC 7647-01-0 HCl
 PRO AG 570416-18-1
 SOL 7732-18-5 Water, 123-91-1 Dioxane
 CON 15 hours, 100 - 105 deg C

RX(11) OF 45 ...AA + AH ==> AI...



RX(11) RCT AA 649736-84-5, AH 14092-04-7
 RGT T 7646-85-7 ZnCl2
 PRO AI 570416-12-5
 CAT 15629-92-2 Ni complex
 SOL 109-99-9 THF
 CON SUBSTAGE(1) 2 hours, -10 deg C
 SUBSTAGE(2) 10 hours, room temperature

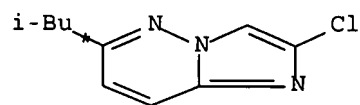
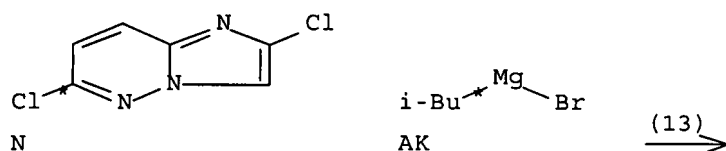
RX(12) OF 45 ...AI ==> AJ



RX(12) RCT AI 570416-12-5
 RGT AC 7647-01-0 HCl
 PRO AJ 570416-19-2
 SOL 7732-18-5 Water, 123-91-1 Dioxane
 CON 15 hours, 100 - 105 deg C

RX(13) OF 45 N + AK ==> AL...

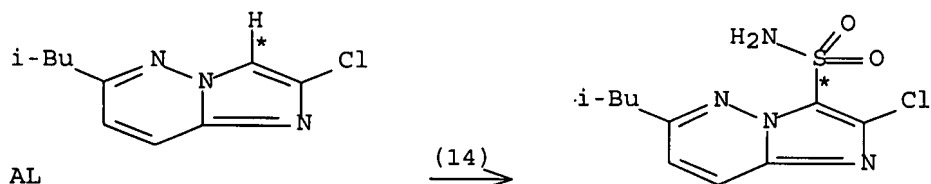
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AL
YIELD 60%

RX(13) RCT N 112581-77-8, AK 926-62-5
 PRO AL 570416-23-8
 CAT 15629-92-2 Ni complex
 SOL 109-99-9 THF
 CON SUBSTAGE(1) 10 minutes, 0 deg C
 SUBSTAGE(2) 2 hours, room temperature

RX(14) OF 45 ...AL ==> AM



AM
YIELD 64%

RX(14) RCT AL 570416-23-8

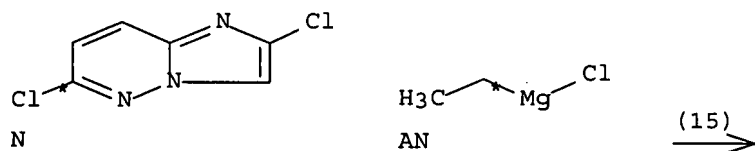
 STAGE(1)
 RGT H 7790-94-5 ClSO3H
 SOL 67-66-3 CHCl3
 CON 9 hours, reflux

 STAGE(2)
 RGT I 10025-87-3 POCl3, J 121-44-8 Et3N
 CON 4 hours, reflux

 STAGE(3)
 RGT V 7664-41-7 NH3
 SOL 67-66-3 CHCl3
 CON SUBSTAGE(1) 30 minutes, 0 deg C
 SUBSTAGE(2) 1 hour, room temperature

 PRO AM 570416-24-9

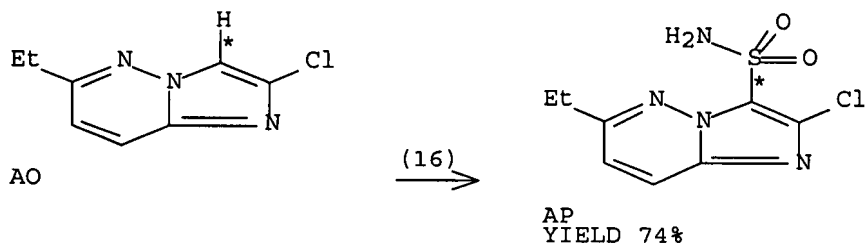
RX(15) OF 45 N + AN ==> AO...



AO
YIELD 66%

RX(15) RCT N 112581-77-8, AN 2386-64-3
 PRO AO 570416-44-3
 CAT 15629-92-2 Ni complex
 SOL 109-99-9 THF
 CON SUBSTAGE(1) 10 minutes, 0 deg C
 SUBSTAGE(2) 2 hours, room temperature

RX(16) OF 45 ...AO ==> AP



RX(16) RCT AO 570416-44-3

STAGE(1)

RGT H 7790-94-5 ClSO₃H
 SOL 107-06-2 ClCH₂CH₂Cl
 CON 5 hours, reflux

STAGE(2)

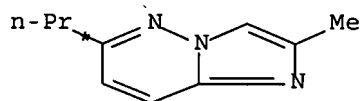
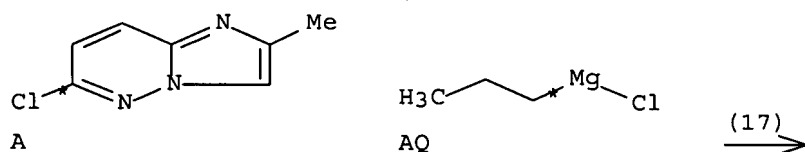
RGT I 10025-87-3 POCl₃, J 121-44-8 Et₃N
 CON 2 hours, reflux

STAGE(3)

RGT V 7664-41-7 NH₃
 SOL 75-05-8 MeCN
 CON 2 hours, room temperature

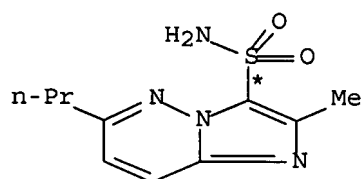
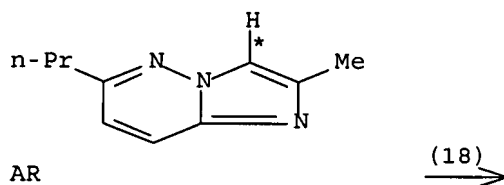
PRO AP 570416-45-4

RX(17) OF 45 A + AQ ==> AR...

AR
YIELD 19%

RX(17) RCT A 14793-00-1, AQ 2234-82-4
 PRO AR 570416-46-5
 CAT 15629-92-2 Ni complex
 SOL 60-29-7 Et2O, 109-99-9 THF
 CON SUBSTAGE(1) 2 hours, room temperature
 SUBSTAGE(2) 3 hours, reflux

RX(18) OF 45 ...AR ==> AS

AS
YIELD 14%

RX(18) RCT AR 570416-46-5

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STAGE(1)

RGT H 7790-94-5 ClSO₃H
SOL 107-06-2 ClCH₂CH₂Cl
CON 5 hours, reflux

STAGE(2)

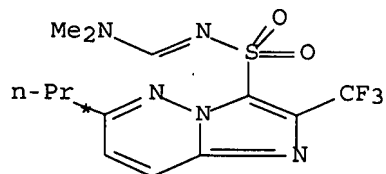
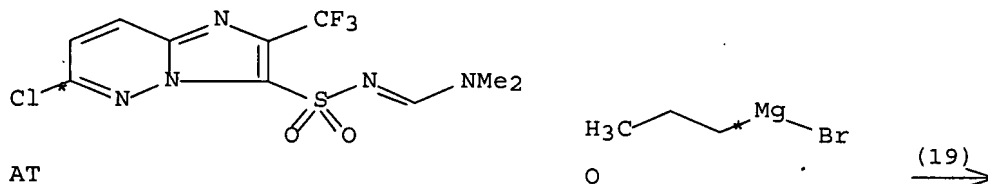
RGT I 10025-87-3 POCl₃, J 121-44-8 Et₃N
CON 2 hours, reflux

STAGE(3)

RGT V 7664-41-7 NH₃
SOL 75-05-8 MeCN
CON 2 hours, room temperature

PRO AS 570416-47-6

RX(19) OF 45 ...AT + O ==> AU...

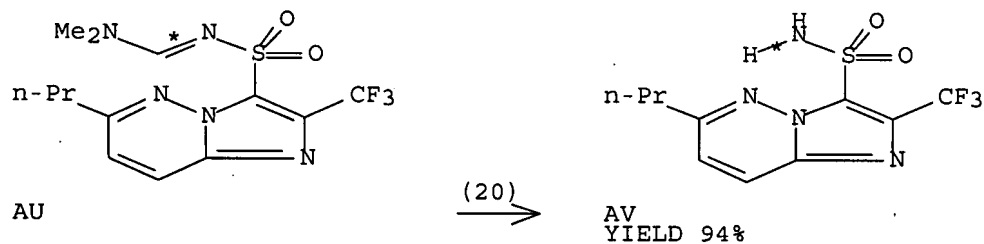


AU
YIELD 60%

RX(19) RCT AT 649736-86-7, O 927-77-5
PRO AU 649736-87-8
CAT 15629-92-2 Ni complex
SOL 109-99-9 THF
CON SUBSTAGE(1) 30 minutes, 0 deg C
SUBSTAGE(2) 4.5 hours, room temperature

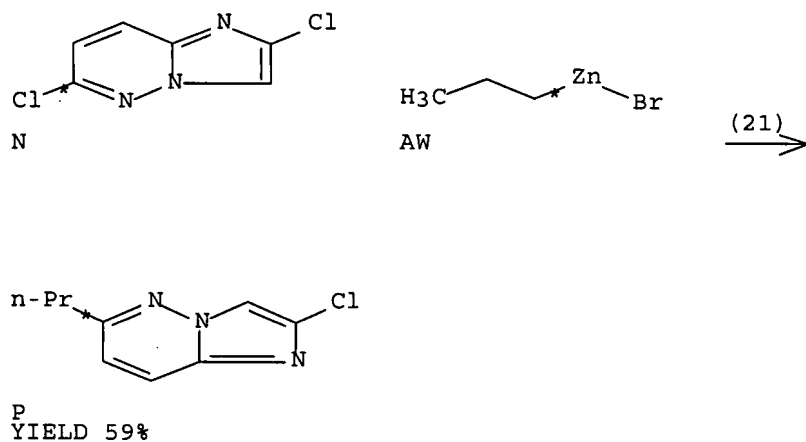
RX(20) OF 45 ...AU ==> AV

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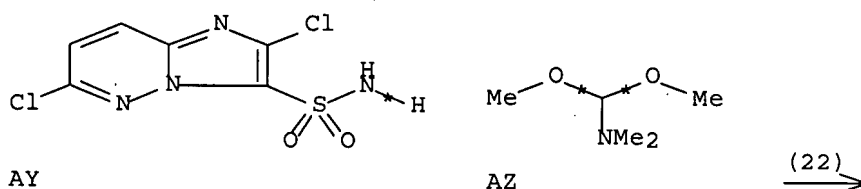
RX(20) RCT AU 649736-87-8
 RGT AC 7647-01-0 HCl
 PRO AV 649736-88-9
 SOL 7732-18-5 Water, 123-91-1 Dioxane
 CON SUBSTAGE(1) 2 hours, 60 deg C
 SUBSTAGE(2) 2 hours, 80 deg C
 SUBSTAGE(3) 2 hours, 90 deg C

RX(21) OF 45 N + AW ==> P...

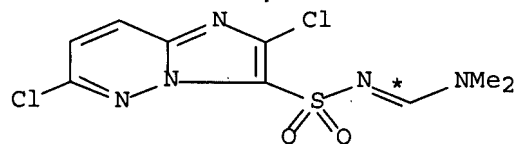


RX(21) RCT N 112581-77-8, AW 156567-57-6
 PRO P 570416-05-6
 CAT 15629-92-2 Ni complex
 SOL 108-88-3 PhMe
 CON 2 hours, 80 deg C

RX(22) OF 45 AY + AZ ==> BA



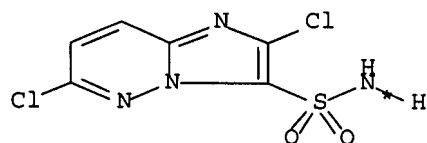
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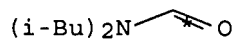
BA
YIELD 100%

RX(22) RCT AY 112582-77-1, AZ 4637-24-5
PRO BA 649736-89-0
SOL 108-88-3 PhMe
CON 4 hours, reflux

RX(23) OF 45 AY + BB ==> Y...

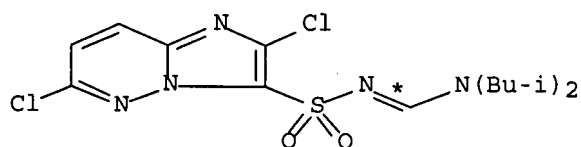


AY



BB

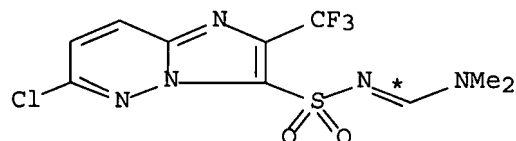
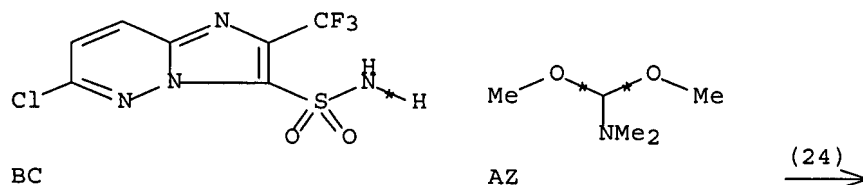
(23) →



Y
YIELD 59%

RX(23) RCT AY 112582-77-1, BB 2591-76-6
RGT I 10025-87-3 POCl3, J 121-44-8 Et3N
PRO Y 649736-83-4
SOL 67-66-3 CHCl3
CON SUBSTAGE(1) 1 hour, 0 deg C
SUBSTAGE(2) 1 hour, room temperature

RX(24) OF 45 BC + AZ ==> AT...



AT
YIELD 97%

RX(24) RCT BC 570416-53-4, AZ 4637-24-5
PRO AT 649736-86-7
SOL 108-88-3 PhMe
CON 3.5 hours, reflux

L9 ANSWER 2 OF 2 CASREACT COPYRIGHT 2007 ACS on STN
AN 83:58733 CASREACT Full-text
TI Pyridazines. LXIIV. Synthesis of some tricyclic heterocycles fused at the nitrogen-carbon (N-1-C-8) bond of imidazo[1,2-b]pyridazines
AU Polanc, S.; Stanovnik, B.; Tisler, M.
CS Dep. Chem., Univ. Ljubljana, Ljubljana, Yugoslavia
SO Synthesis (1975), (3), 175-6
CODEN: SYNTBF; ISSN: 0039-7881
DT Journal
LA English
CC 28-16 (Heterocyclic Compounds (More Than One Hetero Atom))
GI For diagram(s), see printed CA Issue.
AB Tetrachloroaminoimidazo[1,2-b]pyridazine (I, R = NH₂, R₁ = Cl) obtained from the pentachloro compound and NH₃, was dehalogenated (Pd-C) to give I (R = NH₂, R₁ = H), which reacted with PhCOCH₂Br to give the azoniatriazaacenaphthylene derivative II. II reacted with COCl₂ to give the azoniatriazacyclopentindene III. I (R = SK, R₁ = Cl) was refluxed with (BrCH₂)₂-MeOH to give the disulfide IV.
ST aminoimidazopyridazine; azoniatriazacyclopentindene; imidazopyridazine amino; chloroaminoimidazopyridazine; azoniatriazaacenaphthylene
IT 56477-91-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and dechlorination of)
IT 56477-92-0P 56477-93-1P 56477-94-2P 56477-95-3P 56477-96-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
IT 56477-97-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with 1,2-dibromoethane)
IT 33852-31-2

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RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with ammonia)

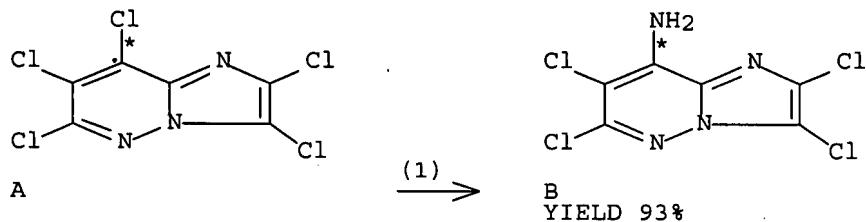
IT 106-93-4

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with potassium mercaptotetrachloroimidazo[1,2-b]pyridazine)

IT 7664-41-7, reactions

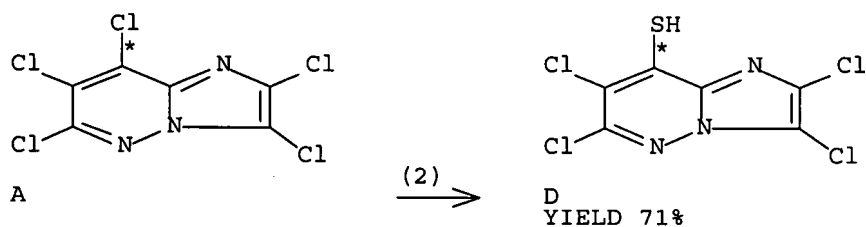
RL: RCT (Reactant); RACT (Reactant or reagent)
(with pentachloroimidazo[1,2-b]pyridazine)

RX(1) OF 8 A ==> B



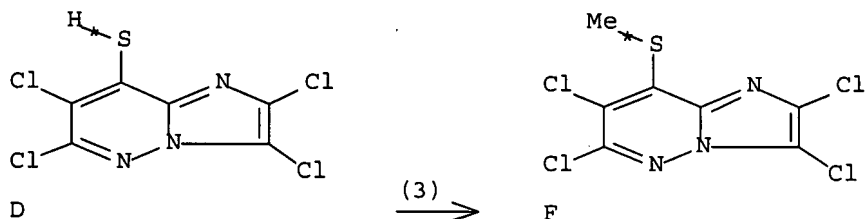
RX(1) RCT A 33852-31-2
RGT C 7664-41-7 NH3
PRO B 56477-91-9

RX(2) OF 8 A ==> D...



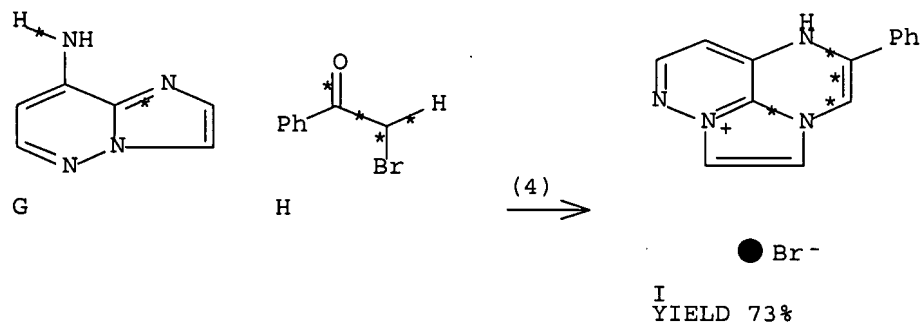
RX(2) RCT A 33852-31-2
RGT E 1310-61-8 KSH
PRO D 56477-93-1

RX(3) OF 8 ...D ==> F



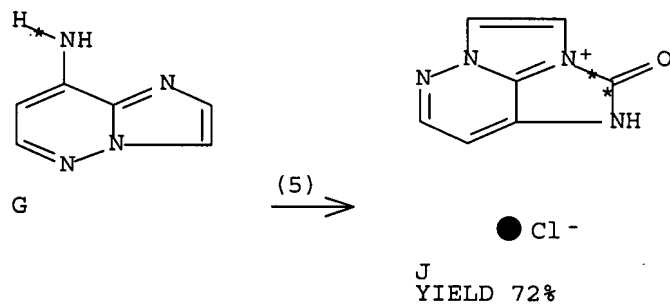
RX(3) RCT D 56477-93-1
 PRO F 337914-12-2

RX(4) OF 8 G + H ==> I



RX(4) RCT G 56477-92-0, H 70-11-1
 PRO I 56477-94-2

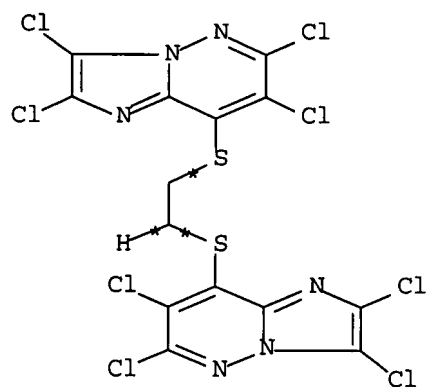
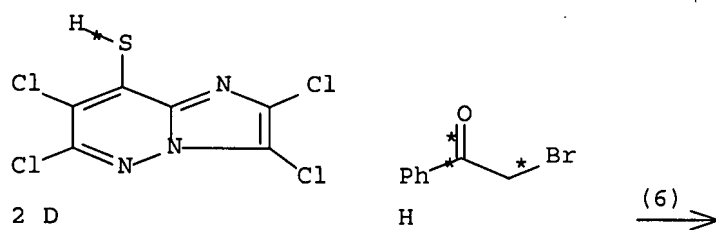
RX(5) OF 8 G ==> J



RX(5) RCT G 56477-92-0
 PRO J 56477-95-3

RX(6) OF 8 ...2 D + H ==> K

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K
YIELD 21%

RX (6) RCT D 56477-93-1, H 70-11-1
 PRO K 56477-96-4